B370BE-B3100BE
B370CE-B3100CE

3.0A SCHOTTKY BARRIER RECTIFIER

Product Summary

Device	V_{RRM} (V)	I_O (A)	V_F Max (V) @ +25°C	I_R Max (mA) @ +25°C
B370BE/CE	70	3.0	0.79	0.10
B380BE/CE	80	3.0	0.79	0.15
B390BE/CE	90	3.0	0.79	0.20
B3100BE/CE	100	3.0	0.79	0.30

Features and Benefits

- Reduced Low Forward Voltage Drop (V_F); Better Efficiency and Cooler Operation
- Reduced High-temperature Reverse Leakage; Increased Reliability against Thermal Runaway Failure in High Temperature Operation.
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Description and Applications

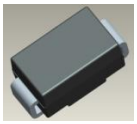
The Schottky rectifier providing low V_F and excellent reverse leakage stability at high temperatures, this device is ideal for use in general rectification applications such as:

- Boost Diode
- Blocking Diode
- Recirculating Diode

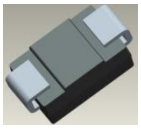
Mechanical Data

- Case: SMB, SMC
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band
- Weight: SMB- 0.093 grams (Approximate)
  SMC- 0.21 grams (Approximate)

SMB, SMC



Top View



Bottom View

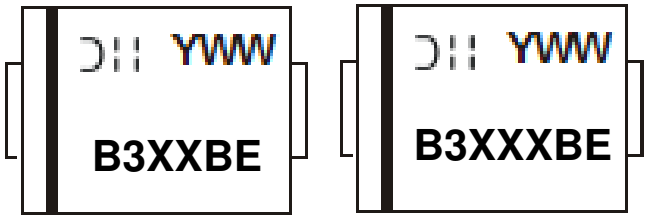
Ordering Information (Note 4)

Part Number	Case	Packaging
B3XXBE-13	SMB	3,000/Tape & Reel
B3XXCE-13	SMC	3,000/Tape & Reel
B3XXXBE-13	SMB	3,000/Tape & Reel
B3XXXCE-13	SMC	3,000/Tape & Reel

Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information

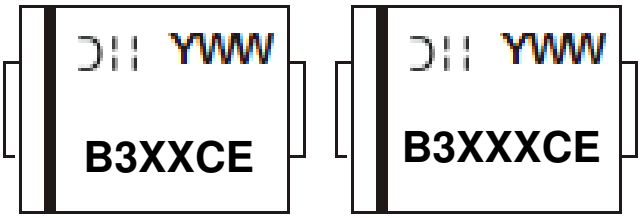
SMB



B3XXBE or B3XXXBE = Product Type Marking Code, ex: B370BE
= Manufacturers' Code Marking
YWW = Date Code Marking
Y = Last Digit of Year (ex: 7 for 2017)
WW = Week Code (01 to 53)

Marking Information (Cont.)

SMC



B3XXCE or B3XXXCE = Product Type Marking Code, ex: B370CE
= Manufacturers' Code Marking
YWW = Date Code Marking
Y = Last Digit of Year (ex: 7 for 2017)
WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	B370BE B370CE	B380BE B380CE	B390BE B390CE	B3100BE B3100CE	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	70	80	90	100	V
Average Rectified Output Current	I_O	3				A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	100				A

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	SMB SMC	$R_{\theta JA}$	90 70	°C/W
Typical Thermal Resistance Junction to Case (Note 5)	SMB SMC	$R_{\theta JC}$	50 30	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop		V_F	— —	0.74 0.60	0.79 —	V	I_F = 3A, T_A = +25°C I_F = 3A, T_A = +125°C
Leakage Current (Note 6)	B370BE/ B370CE B380BE/B380CE B390BE/B390CE B3100BE/ B3100CE	I_R	— — — — —	— — — — 0.7	0.10 0.15 0.20 0.30 —	mA	V_R = 70V, T_A = +25°C V_R = 80V, T_A = +25°C V_R = 90V, T_A = +25°C V_R = 100V, TA = +25°C V_R = 100V, T_A = +125°C
Typical Capacitance		C_T	—	105	—	pF	V_R = 4.0V, f = 1MHz

Notes: 5. Device mounted on FR-4 substrate, 1"*1", 2oz, single-sided, PC boards with 0.56"*0.73" copper pad.
6. Short duration pulse test used to minimize self-heating effect.

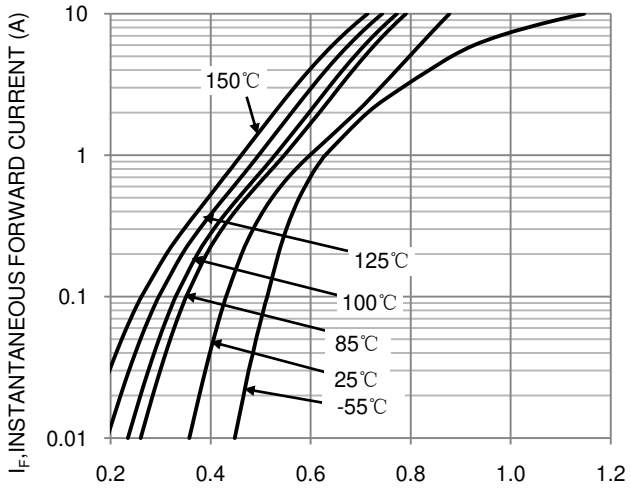


Figure 1. Typical Forward Characteristics

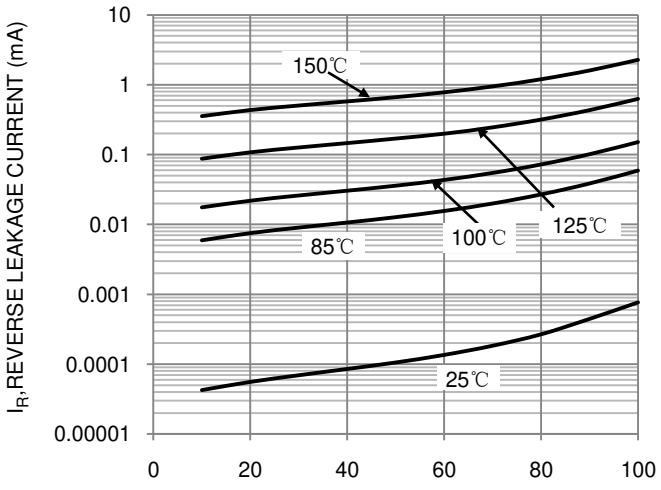


Figure 2. Typical Reverse Characteristics

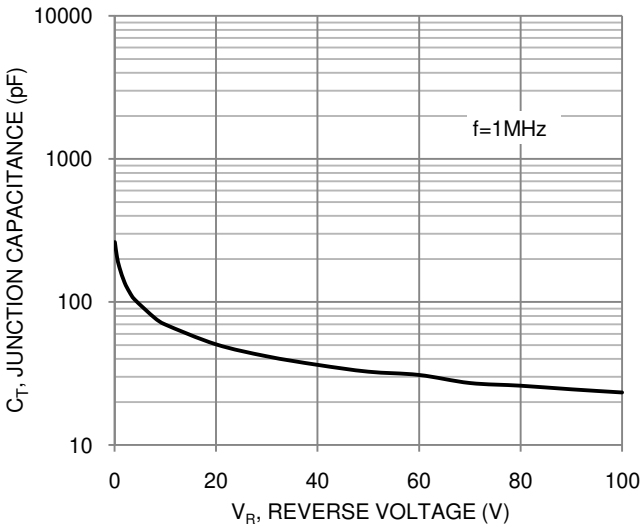


Figure 3. Typical Junction Capacitance

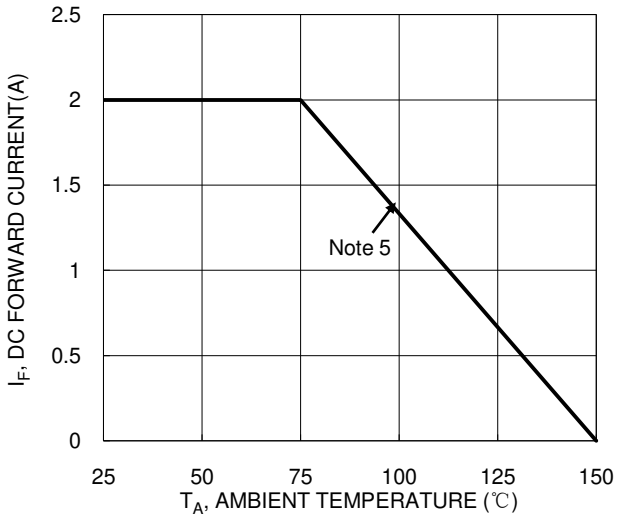
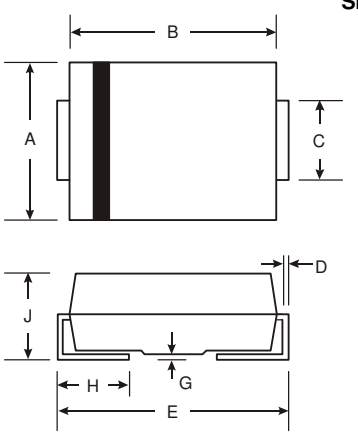


Figure. 4. DC Forward Current Derating

Package Outline Dimensions

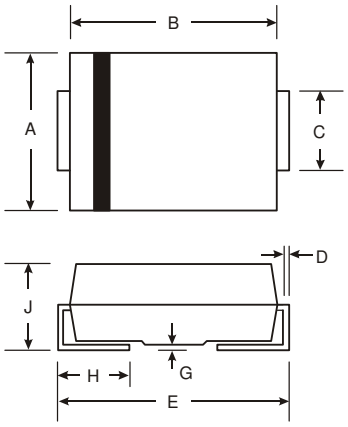
Please see http://www.diodes.com/package-outlines.html for the latest version.

SMB



SMB		
Dim	**Min**	**Max**
A	3.30	3.94
B	4.06	4.57
C	1.96	2.21
D	0.15	0.31
E	5.00	5.59
G	0.05	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

SMC

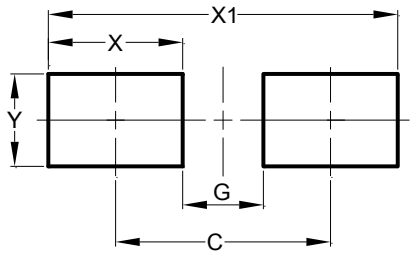


SMC		
Dim	**Min**	**Max**
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.50
All Dimensions in mm		

Suggested Pad Layout

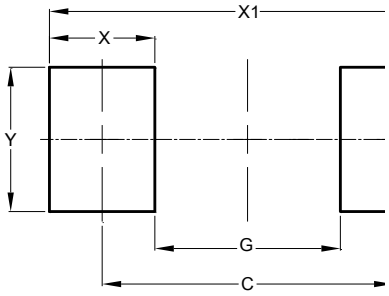
Please see http://www.diodes.com/package-outlines.html for the latest version.

SMB



Dimensions	Value (in mm)
C	4.30
G	1.80
X	2.50
X1	6.80
Y	2.30

SMC



Dimensions	Value (in mm)
C	6.90
G	4.40
X	2.50
X1	9.40
Y	3.30

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